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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/720,744	06/11/2001	Wilmert De Bosscher	522-1730	5005

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EXAMINER

DUNWOODY, AARON M

ART UNIT

PAPER NUMBER

3679

DATE MAILED: 08/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/720,744

Applicant(s)

BOSSCHER ET AL.

Examiner

Aaron M. Dunwoody

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-19, 21-40 and 42-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-19, 21-40 and 42-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 14-19, 21-40 and 42-44 are rejected under 35 U.S.C. 102(b) as being anticipated by Swiss patent CH 615988 A5, Gabus.

In regards to claim 42, in Figure 1, Gabus discloses vacuum tight coupling for end portions of two tubular sections (1, 2), each tubular section having an inner diameter and an outer diameter, the outer diameter of the first tubular section being smaller than the inner diameter of the second tubular section, the second tubular section axially slidable over the first tubular section to abut against a peripheral outer abutment ring on the first tubular section, the coupling further including at least one sealing ring (13) located between the outer diameter of the first tubular section and the inner diameter of the second tubular section in a sliding overlapping contact area (10) of the first and second tubular sections and further comprising a clamping ring (9) with a substantially cylindrical outer surface and being composed of clamping elements, each clamp element having a semicircular or U-shaped cross section with an inwardly oriented recess, the recess enclosing the abutment ring and a flange extremity on the second tubular section, the recess cooperating with the flange extremity to positively, solidly and axially clamp the abutment ring against the flange extremity, the clamp

elements being fixed to each other at their extremities with fixing means comprising in at least one place on the clamping ring bolting means, the axis of which is perpendicular to the longitudinal axis of the coupled tubular sections and substantially tangential to the clamping ring periphery.

In regards to claim 43, in Figure 1, Gabus discloses a vacuum tight coupling for end portions of two tubular sections, the first tubular section being a spindle, the second tubular section being a target, the spindle being stationary and the target being rotatable around its axis, the end portion of the second tubular section having an inner tubular wall and the end portion of the first tubular section having an outer tubular wall, the inner wall of the second tubular section being slidable over the outer wall end portion of the first tubular section creating an area of overlap, at least one sealing ring located in the area of overlap between the inner tubular wall and the outer tubular wall, the end portion of the first tubular section further including an abutment ring about the outer periphery and the end portion of the second tubular section further including a flange extremity, the coupling further including a clamping ring with a substantially cylindrical outer surface and being composed of clamping elements, each clamp element having a semi-circular or U-shaped cross section with an inwardly oriented recess, the recess enclosing the abutment ring and a flange extremity on the second tubular section, the recess cooperating with the flange extremity to positively, solidly and axially clamp the abutment ring against the flange extremity while exercising a uniform and radial pressure on the at least one sealing ring, the clamp elements being fixed to each other at their extremities with fixing means comprising in at least one place on the clamping

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ring bolting means, the axis of which is perpendicular to the longitudinal axis of the coupled tubular sections and substantially tangential to the clamping ring periphery.

In regards to claim 44, in Figure 1, Gabus discloses a vacuum tight coupling for end portions of two tubular sections having end portions, the end portion of the first tubular section being a flange extending in a radial direction from the first tubular section, the flange being of a diameter not exceeding the maximum diameter of the second tube section, the second tube end portion being slidable over the end portion of the first tubular section creating an area of overlap, at least one sealing ring located in the area of overlap, the end portion of the first tubular section further including an abutment ring about the outer periphery and the end portion of the second tubular section further including a flange extremity, the coupling further including a clamping ring with a substantially cylindrical outer surface and being composed of clamping elements, each clamp element having a semi-circular or U-shaped cross section with an inwardly oriented recess, the recess enclosing the abutment ring and a flange extremity on the second tubular section, the recess cooperating with the flange extremity to positively, solidly and axially clamp the abutment ring against the flange extremity, the clamp elements being fixed to each other at their extremities with fixing means comprising in at least one place on the clamping ring bolting means, the axis of which is perpendicular to the longitudinal axis of the coupled tubular sections and substantially tangential to the clamping ring periphery.

In regards to claim 14, in Figure 1, Gabus discloses the flange extremity being a separate ring.

In regards to claim 15, in Figure 1, Gabus discloses the ring halves, besides the bolting means for fixing their extremities in one place comprise pivoting means for fixing them in their opposite extremities.

In regards to claim 16, in Figure 1, Gabus discloses the first end portion comprising a tubular insert coupled between a tubular section and the second end portion, and wherein the insert end facing the tubular section is a ring which can slide axially over the tubular section whereas the opposite insert end is a ring over which the second end portion can slide.

In regards to claim 17, in Figure 1, Gabus discloses the length of the overlap portion between the first and second tube portions being 50% or less of the inner diameter of the first portion.

In regards to claim 18, in Figure 1, Gabus discloses the length of the overlap portion between the first and second end portions being 5% or more of the inner diameter of the first portion.

In regards to claim 19, in Figure 1, Gabus discloses the coupling being an a high vacuum or ultra-high vacuum coupling.

In regards to claim 21, in Figure 1, Gabus discloses the flange extremity being a separate ring.

In regards to claim 22, in Figure 1, Gabus discloses the ring halves, besides the bolting means for fixing their extremities in one place comprise pivoting means for fixing them in their opposite extremities.

In regards to claim 23, in Figure 1, Gabus discloses the first end position comprising a tubular insert coupled between a tubular section and the second end portion, and wherein the insert end facing the tubular section is a ring which can slide axially over the tubular section whereas the opposite insert end is a ring over which the second end portion can slide.

In regards to claim 24, in Figure 1, Gabus discloses the length of the overlap portion between the first and second tube portions being 50% or less of the inner diameter of the first portion.

In regards to claim 25, in Figure 1, Gabus discloses the length of the overlap portion between the first and second end portions being 5% or more of the inner diameter of the first portion.

In regards to claim 26, in Figure 1, Gabus discloses the coupling being a high vacuum or ultra-high vacuum coupling.

In regards to claim 27, in Figure 1, Gabus discloses the fixing means of the clamping ring being located on the side of the coupling remote from the sputtering target.

In regards to claim 28, in Figure 1, Gabus discloses an anti-arcing element.

In regards to claim 29, in Figure 1, Gabus discloses the anti-arcing element being attached to a surface of the clamping ring on the same side as the sputtering target for preventing arcing.

In regards to claim 30, in Figure 1, Gabus discloses the anti-arcing element being conductive or insulating.

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In regards to claim 31, in Figure 1, Gabus discloses at least one groove being provided between the anti-arc element and the clamping ring.

In regards to claim 32, in Figure 1, Gabus discloses the arcing element touching a surface of the sputtering target.

In regards to claim 33, in Figure 1, Gabus discloses the length of the overlap portion between the first and second tube portions being 30% or less of the inner diameter of the first portion.

In regards to claim 34, in Figure 1, Gabus discloses the length of the overlap portion between the first and second tube portions being 20% or less of the inner diameter of the first portion.

In regards to claim 35, in Figure 1, Gabus discloses the length of the overlap portion between the first and second tube portions being 30% or less of the inner diameter of the first portion.

In regards to claim 36, in Figure 1, Gabus discloses the length of the overlap portion between the first and second tube portions being 20% or less of the inner diameter of the first portion.

In regards to claim 37, in Figure 1, Gabus discloses the clamp elements being two substantially equal ring halves.

In regards to claim 38, in Figure 1, Gabus discloses the clamp elements being two substantially equal ring halves.

In regards to claim 39, in Figure 1, Gabus discloses the length of the overlap portion between the first and second tube portions being at least 5% of the inner diameter of the first portion.

In regards to claim 40, in Figure 1, Gabus discloses the length of the overlap portion between the- first and second tube portions being at least 5% of the inner diameter of the first portion.

Claims 14-18, 21-40 and 42-44 are rejected under 35 U.S.C. 102(b) as being anticipated by German patent DE 4105206 A1, Weinhold.

In regards to claim 42, in Figure 1, Weinhold discloses vacuum tight coupling for end portions of two tubular sections (3, 4), each tubular section having an inner diameter and an outer diameter, the outer diameter of the first tubular section being smaller than the inner diameter of the second tubular section, the second tubular section axially slidable over the first tubular section to abut against a peripheral outer abutment ring on the first tubular section, the coupling further including at least one sealing ring (11) located between the outer diameter of the first tubular section and the inner diameter of the second tubular section in a sliding overlapping contact area of the first and second tubular sections and further comprising a clamping ring (7) with a substantially cylindrical outer surface and being composed of clamping elements, each clamp element having a semicircular or U-shaped cross section with an inwardly oriented recess, the recess enclosing the abutment ring and a flange extremity on the second tubular section, the recess cooperating with the flange extremity to positively,

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solidly and axially clamp the abutment ring against the flange extremity, the clamp elements being fixed to each other at their extremities with fixing means comprising in at least one place on the clamping ring bolting means, the axis of which is perpendicular to the longitudinal axis of the coupled tubular sections and substantially tangential to the clamping ring periphery.

In regards to claim 43, in Figure 1, Weinhold discloses a vacuum tight coupling for end portions of two tubular sections, the first tubular section being a spindle, the second tubular section being a target, the spindle being stationary and the target being rotatable around its axis, the end portion of the second tubular section having an inner tubular wall and the end portion of the first tubular section having an outer tubular wall, the inner wall of the second tubular section being slidable over the outer wall end portion of the first tubular section creating an area of overlap, at least one sealing ring located in the area of overlap between the inner tubular wall and the outer tubular wall, the end portion of the first tubular section further including an abutment ring about the outer periphery and the end portion of the second tubular section further including a flange extremity, the coupling further including a clamping ring with a substantially cylindrical outer surface and being composed of clamping elements, each clamp element having a semi-circular or U-shaped cross section with an inwardly oriented recess, the recess enclosing the abutment ring and a flange extremity on the second tubular section, the recess cooperating with the flange extremity to positively, solidly and axially clamp the abutment ring against the flange extremity while exercising a uniform and radial pressure on the at least one sealing ring, the clamp elements being

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fixed to each other at their extremities with fixing means comprising in at least one place on the clamping ring bolting means, the axis of which is perpendicular to the longitudinal axis of the coupled tubular sections and substantially tangential to the clamping ring periphery.

In regards to claim 44, in Figure 1, Weinhold discloses a vacuum tight coupling for end portions of two tubular sections having end portions, the end portion of the first tubular section being a flange extending in a radial direction from the first tubular section, the flange being of a diameter not exceeding the maximum diameter of the second tube section, the second tube end portion being slidable over the end portion of the first tubular section creating an area of overlap, at least one sealing ring located in the area of overlap, the end portion of the first tubular section further including an abutment ring about the outer periphery and the end portion of the second tubular section further including a flange extremity, the coupling further including a clamping ring with a substantially cylindrical outer surface and being composed of clamping elements, each clamp element having a semi-circular or U-shaped cross section with an inwardly oriented recess, the recess enclosing the abutment ring and a flange extremity on the second tubular section, the recess cooperating with the flange extremity to positively, solidly and axially clamp the abutment ring against the flange extremity, the clamp elements being fixed to each other at their extremities with fixing means comprising in at least one place on the clamping ring bolting means, the axis of which is perpendicular to the longitudinal axis of the coupled tubular sections and substantially tangential to the clamping ring periphery.

In regards to claim 14, in Figure 1, Weinhold discloses the outer diameter of the first tubular section being generally parallel to the opposing surface of the inner wall of the second tubular section from the sealing ring to the end of the first tubular section, and wherein the flange extremity being a separate ring.

In regards to claim 15, in Figure 1, Weinhold discloses the ring halves, besides the bolting means for fixing their extremities in one place comprise pivoting means for fixing them in their opposite extremities.

In regards to claim 16, in Figure 1, Weinhold discloses the first end portion comprising a tubular insert coupled between a tubular section and the second end portion, and wherein the insert end facing the tubular section is a ring which can slide axially over the tubular section whereas the opposite insert end is a ring over which the second end portion can slide.

In regards to claim 17, in Figure 1, Weinhold discloses the length of the overlap portion between the first and second tube portions being 50% or less of the inner diameter of the first portion.

In regards to claim 18, in Figure 1, Weinhold discloses the length of the overlap portion between the first and second end portions being 5% or more of the inner diameter of the first portion.

In regards to claim 21, in Figure 1, Weinhold discloses the flange extremity being a separate ring.

In regards to claim 22, in Figure 1, Weinhold discloses the ring halves, besides the bolting means for fixing their extremities in one place comprise pivoting means for fixing them in their opposite extremities.

In regards to claim 23, in Figure 1, Weinhold discloses the first end position comprising a tubular insert coupled between a tubular section and the second end portion, and wherein the insert end facing the tubular section is a ring which can slide axially over the tubular section whereas the opposite insert end is a ring over which the second end portion can slide.

In regards to claim 24, in Figure 1, Weinhold discloses the length of the overlap portion between the first and second tube portions being 50% or less of the inner diameter of the first portion.

In regards to claim 25, in Figure 1, Weinhold discloses the length of the overlap portion between the first and second end portions being 5% or more of the inner diameter of the first portion.

In regards to claim 26, in Figure 1, Weinhold discloses the coupling being a high vacuum or ultra-high vacuum coupling.

In regards to claim 27, in Figure 1, Weinhold discloses the fixing means of the clamping ring being located on the side of the coupling remote from the sputtering target.

In regards to claim 28, in Figure 1, Weinhold discloses an anti-arcing element.

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In regards to claim 29, in Figure 1, Weinhold discloses the anti-arcing element being attached to a surface of the clamping ring on the same side as the sputtering target for preventing arcing.

In regards to claim 30, in Figure 1, Weinhold discloses the anti-arcing element being conductive or insulating.

In regards to claim 31, in Figure 1, Weinhold discloses at least one groove being provided between the anti-arcing element and the clamping ring.

In regards to claim 32, in Figure 1, Weinhold discloses the arcing element touching a surface of the sputtering target.

In regards to claim 33, in Figure 1, Weinhold discloses the length of the overlap portion between the first and second tube portions being 30% or less of the inner diameter of the first portion.

In regards to claim 34, in Figure 1, Weinhold discloses the length of the overlap portion between the first and second tube portions being 20% or less of the inner diameter of the first portion.

In regards to claim 35, in Figure 1, Weinhold discloses the length of the overlap portion between the first and second tube portions being 30% or less of the inner diameter of the first portion.

In regards to claim 36, in Figure 1, Weinhold discloses the length of the overlap portion between the first and second tube portions being 20% or less of the inner diameter of the first portion.

In regards to claim 37, in Figure 1, Weinhold discloses the clamp elements being two substantially equal ring halves.

In regards to claim 38, in Figure 1, Weinhold discloses the clamp elements being two substantially equal ring halves.

In regards to claim 39, in Figure 1, Weinhold discloses the length of the overlap portion between the first and second tube portions being at least 5% of the inner diameter of the first portion.

In regards to claim 40, in Figure 1, Weinhold discloses the length of the overlap portion between the- first and second tube portions being at least 5% of the inner diameter of the first portion.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

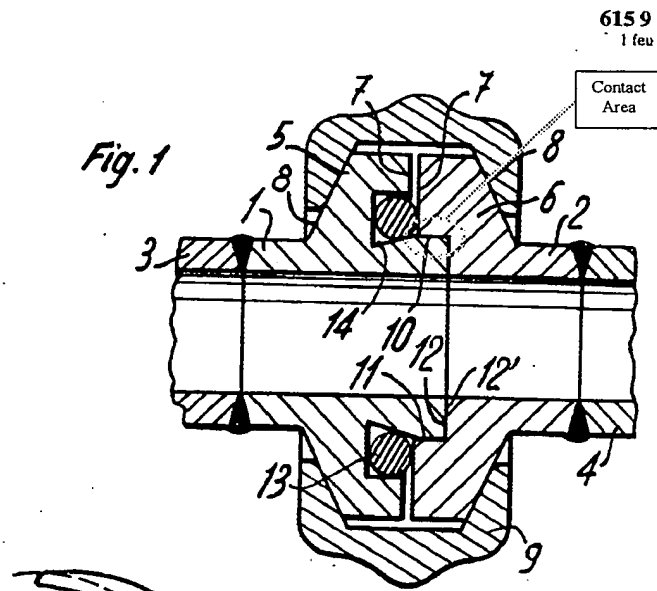
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weinhold.

In regards to claim 19, Weinhold discloses the claimed invention except for a second sealing ring. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a second sealing ring, since duplicating the components of a prior art device is a design consideration within the skill of the art. In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

Response to Arguments

Applicant's arguments filed 5/6/2005 have been fully considered but they are not persuasive. The Applicant argues that Gabus '988 does not locate the sealing ring 13 in a sliding overlap contact area. The Examiner disagrees. In Figure 1 below, Gabus '988 clearly illustrates the sealing ring 13 protruding in a sliding overlap contact area.



In response to applicant's argument that Weinhold does not disclose a cylindrical sputtering target, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 312 F.2d 937, 939, 136 USPQ 458, 459 (CCPA 1963).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the area between the end of the first tubular section and the sealing ring being parallel to the opposing inner wall of the second tubular section) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Claim 14 recites, "the first tubular section is generally parallel."

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron M. Dunwoody whose telephone number is 571-272-7080. The examiner can normally be reached on 7:30 am - 4:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on 571-272-7087. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Aaron M Dunwoody
Primary Examiner
Art Unit 3679

.amd